

REMARKS

Claims 1, 10 and 16 are amended. Claims 1-18, as amended, remain in the application. No new matter is added by the amendments to the claims.

The Rejections:

In the Office Action dated October 28, 2005, the Examiner rejected Claims 1-8, 10, 11, 13-16, and 18 under 35 U.S.C. 103(a) as being unpatentable over Häyriinen U.S. Patent No. 5,411,117 in view of Darwent et al. U.S. Patent No. 3,768,597.

Regarding Claim 1, the Examiner stated that Häyriinen discloses a hydraulic elevator repair safety platform comprised of an elongate central beam 12 having a first end and a second end, the beam 12 adapted to be connected to an elevator car 1, but Häyriinen is silent concerning a guide clamp assembly connected to the beam and adapted to be received by an elevator guide rail system. The Examiner further stated that Darwent teaches a guide clamp assembly 13 connected to a beam 21 and adapted to be received by an elevator guide rail system 25 and Darwent further teaches the guide clamp assembly 13 having an actuating arm 87 adapted to be actuated by a downward movement of the elevator car 16, whereby actuation of the actuating arm 87 causes said guide clamp assembly 13 to grip the guide rail system 25, which facilitates immobilization of the elevator car 16. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a guide clamp assembly as taught by Darwent to the central beam of the hydraulic elevator disclosed by Häyriinen to immobilize the elevator car to prevent downward drifts due to hydraulic fluid leaks and provide the elevator car with a safety brake should the car over speed in the downward direction.

Regarding Claim 2, the Examiner stated that Häyriinen further discloses a first end portion, shown in Figure 2 as the left end portion of the beam attached to the car frame, connected to the first end of the beam 12, shown in Figure 2 as the left end of the beam 12, and a second end portion, shown in Figure 2 as the right end portion of the beam attached to the car frame, connected to the second end of the beam 12 shown in Figure 2 as the right end of the beam 12, the first end portion and the second end portion adapted to be connected to the elevator car 1.

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Regarding Claim 4, the Examiner stated that Häyriinen is further silent concerning a guide clamp assembly including a pair of guide clamps, but Darwent further teaches the guide clamp assembly 13 including a pair of guide clamps 47. According to the Examiner, Darwent further teaches one of the guide clamps 47 being connected to the first end of the beam 21 and another guide clamp 47 being connected to the second end of the beam 21, and Darwent further teaches the guide clamps 47 adapted to be received by the elevator guide rail system 25, wherein one guide clamp 47 is actuated by the actuating arm 87 and another guide clamp 47 is actuated by another actuating arm 95 to cause the guide clamps 47 to grip the guide rail system 25. The Examiner stated that it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a guide clamp assembly including a pair of guide clamps as taught by Darwent to the central beam of the hydraulic elevator disclosed by Häyriinen to immobilize the elevator car to prevent downward drifts due to hydraulic fluid leaks and provide the elevator car with a safety brake should the car over speed in the downward direction.

Regarding Claim 5, the Examiner stated that Häyriinen is further silent concerning a guide clamp assembly including a guide clamp linkage, but Darwent further teaches a guide clamp assembly 13 includes a guide clamp linkage 89 linking one actuating arm 87 to another actuating arm 95 to provide a simultaneous actuation the guide clamps 47. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a guide clamp assembly including a guide clamp linkage as taught by Darwent to the central beam of the hydraulic elevator disclosed by Häyriinen to immobilize the elevator car to prevent downward drifts due to hydraulic fluid leaks, provide the elevator car with a safety brake should the car over speed in the downward direction, and facilitate synchronized engagement of the guide clamps.

Regarding Claim 6, the Examiner stated that Häyriinen is further silent concerning a guide clamp assembly including a safety cable, but Darwent further teaches a guide clamp assembly 13 including a safety cable 11 operatively connected to the guide clamp linkage 89 to cause actuation of the actuating arm 87, 95 of each of the guide clamps 47. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a guide clamp assembly including a safety cable as taught by Darwent to the central beam of the hydraulic elevator disclosed by Häyriinen to immobilize the elevator car to prevent

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downward drifts due to hydraulic fluid leaks and provide the elevator car with a safety brake should the car over speed in the downward direction.

Regarding Claim 7, the Examiner stated that Häyrinen further discloses a pair of guide shoes 18 but is silent concerning the guide shoes apart of guide clamps. The Examiner noted that Darwent further teaches the guide clamps 47 including a pair of guide shoes 23 for engagement with the guide rail system 25, and it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of guide shoes disclosed by Häyrinen to the guide clamps taught by Darwent to facilitate the guidance of the elevator and guide clamp assembly on the guide rail system.

Regarding Claim 8, the Examiner stated that Häyrinen further discloses the central beam 12 including a pair of spaced apart channel sections (not numbered but shown in Figure 3) connected by a plurality of rigging members 17.

Regarding Claim 10, the Examiner stated that Häyrinen further discloses a hydraulic elevator repair safety platform comprised of an elongate central beam 12 having a first end and a second end, the beam 12 adapted to be connected to an elevator car 1, but Häyrinen is silent concerning a pair of guide clamps with actuating arms. According to the Examiner, Darwent further teaches a pair of guide clamps 47, each of the guide clamps 47 being connected to an associated one of the first and second ends of a beam 21 and adapted to be received by an elevator guide rail system 25. The Examiner noted that Darwent further teaches each of said guide clamps 47 having an actuating arm 87 for actuation by a downward movement of the elevator car, whereby the actuation of the actuating arm 87, 95 of each of the guide clamps 47 causes the guide clamps 47 to grip the guide rail system 25 which facilitates immobilization of the elevator car 16, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide guide clamps having actuating arms as taught by Darwent to the central beam of the hydraulic elevator disclosed by Häyrinen to immobilize the elevator car to prevent downward drifts due to hydraulic fluid leaks and provide the elevator car with a safety brake should the car over speed in the downward direction.

Regarding Claim 11, the Examiner stated that Häyrinen discloses a first end portion and said second end portion, shown in Figure 2, adapted to be connected to the elevator car 1, but Hayrinen is silent concerning a first and second end portion disposed between a first and second

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end of the beam and guide clamps. The Examiner noted that Darwent et al. further teaches a first end portion disposed between a first end of a beam 21, shown in Figure 5 as the left side of beam 21, and one of the guide clamps 47, and a second end portion disposed between said second end of the beam 21, shown in Figure 5 as the right side of beam 21, and another of said guide clamps 47, Darwent et al. further teaches the first end portion and said second end portion adapted to be connected to the elevator car 16, and it would have been obvious to one of ordinary skill in the art at the time of the invention to dispose the first and second end portion of the beam disclosed by Häyrynen between the first and second end of the beam and guide clamps taught by Darwent to facilitate the connection between the elevator car and the guide clamps.

Regarding Claim 13, the Examiner admitted that Häyrynen is further silent concerning a guide clamp linkage. The Examiner stated that Darwent further teaches a guide clamp linkage 89 linking the actuating arms 87, 95 to provide a simultaneous actuation of the actuating arms 87, 95, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a guide clamp assembly including a guide clamp linkage as taught by Darwent to the central beam of the hydraulic elevator disclosed by Häyrynen to immobilize the elevator car to prevent downward drifts due to hydraulic fluid leaks, provide the elevator car with a safety brake should the car over speed in the downward direction, and facilitate synchronized engagement of the guide clamps.

Regarding Claim 14, the Examiner admitted that Häyrynen is further silent concerning a safety cable. The Examiner stated that Darwent further teaches a safety cable 11 connected to the guide clamp linkage 89 for actuation of actuating arms, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a guide clamp assembly including a safety cable as taught by Darwent to the central beam of the hydraulic elevator disclosed by Häyrynen to immobilize the elevator car to prevent downward drifts due to hydraulic fluid leaks and provide the elevator car with a safety brake should the car over speed in the downward direction.

Regarding Claim 15, the Examiner stated that Häyrynen further discloses a pair of guide shoes 18 to engage the elevator guide rail system 5 but is silent concerning the pair of guide shoes connected to guide clamps. According to the Examiner, Darwent further teaches a pair of guide shoes 23 connected to each of the guide clamps 47 to engage the elevator guide rail system

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25, and it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of guide shoes disclosed by Häyrinen to the guide clamps taught by Darwent to facilitate the guidance of the elevator and guide clamp assembly on the guide rail system.

Regarding Claim 16, the Examiner stated that Häyrinen further discloses a hydraulic elevator repair safety platform comprised of an elongate central beam 12 having a first end and a second end, a first end portion, shown in Figure 2 as the left end portion of the beam attached to the car frame, disposed on the first end of the beam 12, shown in Figure 2 as the left end of the beam 12, and adapted to be connected to an elevator car; a second end portion, shown in Figure 2 as the right end portion of the beam attached to the car frame, disposed on the second end of said beam, shown in Figure 2 as the right end of the beam 12, and adapted to be connected to the elevator car. The Examiner admitted that Häyrinen is further silent concerning a pair of guide clamps adapted to be received by an elevator guide rail system. The Examiner stated that Darwent further teaches: a pair of guide clamps 47 adapted to be received by an elevator guide rail system 25, one of the guide clamps 47 connected to a first end portion and another of said guide clamps 47 connected to said second end portion; each of the guide clamps 47 having an actuating arm 87, 95, whereby the actuation of the actuating arm 87, 95 of each of the guide clamps 47 causes the guide clamps 47 to grip the guide rail system 25 which facilitates immobilization of the elevator car; a guide clamp linkage 89 linking said actuating arms 87, 95 to provide a simultaneous actuation of the actuating arms 87, 95; and a cable 11 operatively connected to the guide clamp linkage 89 to cause actuation of the actuating arms 87, 95 in response to a downward movement of the elevator car. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a guide clamp assembly as taught by Darwent to the central beam of the hydraulic elevator disclosed by Häyrinen to immobilize the elevator car to prevent downward drifts due to hydraulic fluid leaks and provide the elevator car with a safety brake should the car over speed in the downward direction.

Regarding Claim 18, the Examiner stated that Häyrinen further discloses a pair of guide shoes 18 to engage the elevator guide rail system 5 but is silent concerning guide shoes connected to guide clamps. The Examiner noted that Darwent further teaches a pair of guide shoes 23 connected to each of the guide clamps 47 to engage the elevator guide rail system 25,

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and it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of guide shoes disclosed by Häyriinen to the guide clamps taught by Darwent et al. to facilitate the guidance of the elevator and guide clamp assembly on the guide rail system.

The Examiner rejected Claim 3 under 35 U.S.C. 103(a) as being unpatentable over Häyriinen in view of Darwent, and further in view of Chapelain et al. U.S. Patent No. 5,035,300.

Regarding Claim 3, the Examiner noted that Häyriinen is further silent concerning an adjustably connected first and second end portion. The Examiner stated that Chapelain teaches a first end portion 3 adjustably connected to a first end of a beam I and a second end portion 3 is adjustably connected to a second end of said beam I for selectively varying a distance between said first and second end portions 3, and it would have been obvious to one of ordinary skill in the art at the time of the invention to adjustably connect first and second end portions taught by Chapelain to the first and second end of the beam disclosed by Häyriinen to supply means to adapt to various elevator cars.

Regarding Claim 17, the Examiner noted that Häyriinen is further silent concerning an adjustably connected first and second end portion. The Examiner stated that Chapelain teaches a first end portion 3 adjustably connected to a first end of a beam 1 and a second end portion 3 is adjustably connected to a second end of said beam 1, and it would have been obvious to one of ordinary skill in the art at the time of the invention to adjustably connect first and second end portions taught by Chapelain to the first and second end of the beam disclosed by Häyriinen to supply means to adapt to various elevator cars.

The Examiner rejected Claim 9 under 35 U.S.C. 103(a) as being unpatentable over Häyriinen in view of Darwent, and further in view of Mizuno JP Publication No. 04-341478.

Regarding Claim 9, the Examiner noted that Häyriinen discloses rigging members 17 attached to channel sections 27 but is silent concerning rigging members including U-bolts and retaining rod. The Examiner stated that Mizuno teaches rigging members include U-bolts 14 attached to channel sections 5 and to retaining rods 13 extending between the channel sections 5, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the channel sections disclosed by Häyriinen with U-bolts attached to channel sections and to retaining rods extending between the channel sections to facilitate the connection between the channel sections of the beam.

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The Cited References:

Häyrinen shows a hydraulic elevator having an arrester 10 mounted under the elevator car 1 and having a frame beam 11 attached to the car bottom beam 12 by buffers 13 and binders 14. Two latches 20 are rotatably mounted at each end of the beam 12 for movement between a travel position and an arrest position under the control of lifting magnets 21. In the arrest position, the latches 20 catch on stop blocks 26 provided in the wall of the elevator shaft. The arrester 10 prevents downward drift of the elevator car 1 at a floor and emergency stopping in case of a power failure.

Darwent et al. shows a flexible guide clamp safety 13 mounted in the lower horizontal channel members 21 of the car sling. A lever arm 87 is connected to a rotatable shaft 65 that is rotated by downward movement of the elevator car. Rotation of the lever arm 87 brings braking surfaces 47a into contact with the guide rail 25 to retard the movement of a suspended elevator car should it over speed in the downward direction.

Chapelain shows an elevator sheave support beam having an upper tubular body 1 housing a telescopic arm 3 at each end. The arms 3 are retracted for ease of positioning in the elevator shaft and then are extended into the shaft recesses and locked in position.

The Japanese reference shows a hanger wheel mounting shaft 13 attached to an elevator car frame lower beam 5 by U-bolts 14.

The Response:

The Examiner did not identify Claim 17 as being rejected in paragraph 54 of the Detailed Action, but provided a basis for rejection in paragraphs 58-60. Applicant has assumed that the Examiner meant to include Claim 17 in paragraph 54.

Applicant amended independent Claims 1, 10 and 16 to clarify that the repair safety platform is releasably connected to the elevator car during a repair operation and prevents normal operation of the elevator car during the time that it is connected. Support for the amendments to the claims is found on Page 4, Line 14 through Page 5, Line 6.

None of the references cited by the Examiner concern a repair safety platform used to protect maintenance persons working in an elevator shaft.

The Examiner admitted that Häyriinen does not show the claimed guide clamp assembly. However, it also should be noted that the Häyriinen arrester is not actuated by downward movement of the elevator car as defined by Applicant's claims. The Häyriinen arrester 10 is actuated by disconnection of electrical power from the magnets 21.

It would not be obvious to one of ordinary skill in the art to replace the Häyriinen arrester latches and stop blocks with the Darwent guide rail clamps. Häyriinen teaches that the arrester is actuated only upon a stop at a floor (to prevent car drift) or in the case of a power failure. Simply substituting the Darwent guide rail clamps provides no means to actuate the clamps by downward movement of the elevator car. In order to substitute the Darwent over speed actuation mechanism, the whole method of operation of the Häyriinen arrester must be changed.

There are a number of other significant patentable differences between Applicant's claimed invention and the safety device shown in the Häyriinen patent. Applicant's repair safety platform, one installed and actuated, prevents normal operation of the elevator car. The Häyriinen arrester permits normal operation of the elevator car unless there is a power failure, in which case the car would not operate normally anyway. The Häyriinen arrester only stops the car at a floor that is provided with the stop blocks 26. In contrast, Applicant's repair safety platform prevents movement of the car at any position along the guide rails.

There is no reason to use the Chapelain telescoping beam on an elevator car because the Häyriinen and Darwent beams only extend adjacent the guide rails and are sized to the application because each is a permanent part of the elevator installation. Chapelain teaches the use of the telescoping beam to permit positioning in the elevator shaft and, when positioned, the arms are extended into recesses in the shaft walls to fix the beam in the shaft. In contrast, the claimed repair safety platform is moved from car to car so that the central beam is selectively adjustable in length to accommodate different car dimensions.

There is no combination of the cited references that shows or suggests the claimed invention.

The Examiner stated that the prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The Examiner cited: U.S. Patent No. 2,274,000 to Sahlin; U.S. Patent No. 3,124,223 to Kisovek; and U.S. Patent No. 5,301,773 to Jamieson et al.

Applicant reviewed these references and found them to be no more pertinent than the prior art relied upon by the Examiner in the rejections.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.

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